AMENDMENTS

Amendments to the Claims

Please amend the claims according to the following listing of the claims.

Current Listing of Claims

1. - 26. (canceled)

27. (new) A multipath access system for use in an automated immunoassay analyzer, comprising:

(a) a transport device, comprising

(i) means for holding a plurality of vessels, and

(ii) means for moving the vessel holding means in a continuous loop,

(b) a transfer station, comprising a means for moving vessels to and from the vessel holding means,

(c) a programmable controller, programmed to determine an individual path along the continuous loop for each of the vessels,

wherein the determination of each path is based on a resource requirement associated with each vessel.

28. (new) The multipath access system of claim 27, wherein the resource requirement associated with each vessel includes one or more tests, operations, and/or assays to be performed in each vessel.

29. (new) The multipath access system of claim 27, wherein the programmable controller is programmed to receive information regarding the resource requirement associated with each vessel, and wherein the paths determined by the controller do not depend on the order in which the controller receives the information.

30. (new) The multipath access system of claim 27, wherein

the path determined for at least one vessel, requires the transfer station to move at least one vessel to or from the vessel holding means.

31. (new) The multipath access system of claim 27, further comprising a second transport device comprising means for holding a plurality of vessels, and means for moving the vessel holding means in a continuous loop, and

wherein the transfer station comprises a means for moving vessels

(i) from the vessel holding means of the first transport device to the vessel holding means of the second transport device, and

(ii) from the vessel holding means of the second transport device to the vessel holding means of the first transport device.

32. (new) The multipath access system of claim 27, further comprising a delivery station comprising means for delivering one or more vessels to the transport device.

33. (new) The multipath access system of claim 27, further comprising a pipetting station for adding one or more reagents to a vessel positioned in a vessel holding means.

34. (new) The multipath access system of claim 27, further comprising a wash station for washing vessels.

35. (new) The multipath access system of claim 34, wherein the wash station is combined with the transfer station.

36. (new) The multipath access system of claim 27, further comprising an agitating assembly positioned adjacent to the transport device at a location where at least one test vessel held in a vessel holding means contacts the agitating assembly.

37. (new) The multipath access system of claim 36, wherein the agitating assembly is stationary.

38. (new) The multipath access system of claim 27, wherein the means for moving the vessel holding means is adapted to move the vessels clockwise and/or counterclockwise around the continuous loop.

39. (new) A multipath access system for use in an automated immunoassay analyzer, comprising:

(a) a transport device, comprising

(i) a plurality of vessel holders each for holding a vessel, and

(ii) a mechanism for moving the vessel holders in a continuous loop,

(b) a transfer station, comprising a transfer shuttle, positioned to slide in a direction perpendicular to a portion of the transporter device, for moving vessels to and from the vessel holders,

(c) a programmable controller, programmed to determine an individual path along the continuous loop for each of the vessels,

wherein the determination of each path is based on a resource requirement associated with each vessel.

40. (new) The multipath access system of claim 39, wherein the transfer shuttle comprises a horizontal support and at least two projecting members, wherein the projecting members project from the horizontal support, and wherein the projecting members are spaced far enough apart to accommodate at least one test vessel therebetween.

41. (new) The multipath access system of claim 39, wherein the transfer shuttle is positioned so that upon sliding in a direction perpendicular to a portion of the transporter device, a projecting member contacts a test vessel held in a vessel holding means and pushes the test vessel from the transport device.

42. (new) The multipath access system of claim 39, wherein the transfer shuttle is positioned so that upon

sliding in a direction perpendicular to a portion of the transporter device, a first projecting member contacts a first test vessel held in a vessel holding means and pushes the first test vessel from the transport device into the transfer station, while a second projecting member contacts a second test vessel held in the transfer station and pushes the second test vessel out of the transfer station.

43. (new) The multipath access system of claim 42, wherein the second projecting member contacts the second test vessel held in the transfer station and pushes the second test vessel out of the transfer station into a wash station, into a luminometer subsystem, or into a vessel holding means of a second transport device.

44. (new) The multipath access system of claim 42, wherein the transfer station is combined with a wash station.

45. (new) The multipath access system of claim 27, wherein the path determined for each vessel is optimized such that vessels having identical resource requirements travel an equal distance around the continuous loop.

46. (new) The multipath access system of claim 45, wherein for at least one vessel the equal distance comprises the sum of a first distance and a second distance,

wherein the first distance is traveled in a clockwise direction around the continuous loop, and

wherein the second distance is traveled in a counterclockwise direction around the continuous loop.

47. (new) A method for controllably moving samples in an automated immunoassay analyzer comprising:

determining an individual path along a first continuous loop for each of a plurality of samples based on a resource requirement for each sample,

optimizing the path determined for each sample such that samples having identical resource requirements travel an equal distance around the first continuous loop,

wherein for at least one sample the equal distance

comprises the sum of a first distance and a second distance,

wherein the first distance is traveled in a clockwise direction around the first continuous loop,

wherein the second distance is traveled in a counterclockwise direction around the first continuous loop, and

wherein the path determined for at least one sample includes transferring the sample from the first continuous loop to a second continuous loop.